

Remarks

In the office action, the Examiner (1) issued a restriction on the claims, (2) rejected claims 1-18 under 35 U.S.C. 102(a) as being anticipated by WO 99/36760 (the '760 reference), and (3) rejected claims 1-18 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,428,752 issued to Montagu (the Montagu reference). Reconsideration and allowance of the application are requested.

Applicants affirm the election of Group I claims 1-18 for prosecution. Claims 19-101 are accordingly withdrawn from prosecution.

Each of the pending claims is patentable over the cited '760 and Montagu references. Independent claim 1 is directed to a method of washing and drying a pin of a microarray spotting instrument. The method includes the steps of moving the pin to a given position, washing the pin while in the given position by impinging a tip of the pin with at least one stream of wash fluid, and drying the pin without substantially moving the pin from the given position. This method allows pins in spotting instruments to be quickly and efficiently washed. The method is suitable for washing a variety of types of pins, but is especially suitable for washing pins having slot reservoirs at their tips.

✓ The '760 and Montague references disclose spotting instruments having a pin and supply ring mechanism. As shown in Fig. 7 of the Montague reference and Fig. 9G of the '760 reference, a pin 12D is surrounded by a supply ring 14 when washed. An annular nozzle 200 directs fluid along the sides of the pin. For example, the '752 reference in col. 2, lines 34-39, states that there is "a cleaning station [that] comprises a fluid jet arranged to blow down along the length of the deposit device toward its drop depositing end". Thus, rather than impinging the tip of the pin as specified in Claim 1, the cited references disclose flowing fluid along the length of the device toward the tip. Impinging the pin tip with wash fluid is not even suggested by the references because the presence of the supply ring as shown in the above mentioned figures would appear to prevent any impingement of the pin tip with fluid from the nozzle.

Claim 8 further specifies that multiple streams of wash fluid are directed at the pin tip in a swirling pattern. This is neither disclosed, nor suggested by the cited '760 and Montagu references.

Claim 15 further specifies that washing the pin comprises impacting the pin with pulsed streams of wash fluid. This is also neither disclosed, nor suggested by the cited '760 and Montagu references.

Claim 16, which depends on Claim 15, further specifies that the step of washing comprises at least drying said pin between applications of said pulsed streams of washed fluid. This is also neither disclosed, nor suggested by the cited '760 and Montagu references.

Claim 18 and new independent Claim 102 generally describe drying a pin by flowing air past the pin with the air being of a lower humidity than air in an enclosure containing the spotting instrument. As described in the specification, e.g., on page 19, the environment inside the microarray spotter enclosure generally has a controlled humidity. The vacuum drying process is made quicker and more effective by using air for drying that is of lower humidity than air within the enclosure. Claims 18 and 102 are therefore patentable over the cited '760 and Montagu references.


Independent claim 118 is directed to a method of washing and drying a pin of a microarray spotting instrument. The method includes the steps of washing the pin with a wash fluid while applying a vacuum to remove wash fluid previously applied to said pin. The step of drying includes applying a vacuum to draw air past the pin. These steps are neither disclosed nor suggested by the cited references.

Claims 1-4, 6-18, and 102-133 are pending in the present application. Claims 6 and 7 have been amended to change their dependency on Claim 1 since Claim 5 was

cancelled. Claims 7 and 14 were formally amended in view of the amendment to Claim 1 in order to clarify the antecedent basis of some of the claim terms.

As each of the claims is now believed to be condition for allowance, issuance of a notice of allowance is requested.

Respectfully submitted,



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